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ABSTRACT

An overview is presented of the Concerns-Based Adoption Model, which describes the major factors influencing the decisions and actions of individuals in the innovation adoption process. The two critical indicators hypothesized by the model, Level of Use of the Innovation, and Stages of Concern About the Innovation, are discussed. The seven stages of concern (awareness, informational, personal, management, consequence, collaboration, and refocusing) are described. Excerpts from the Levels of Use chart provide a guide to the process of adapting an innovation: nonuse, orientation, preparation, mechanical use, routine, refinement, integration, and renewal. The relationship between the two indicators is examined using a case study approach to investigate the ways in which the concerns of individuals related to their use or nonuse of educational innovations. Two specific research studies are described: a study of the adoption of team teaching at the public school level, and a study of the use of instructional modules in two universities. (JD)

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AN INVESTIGATION OF HOW TEACHERS' CONCERNS INFLUENCE INNOVATION ADOPTION

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AN INVESTIGATION OF HOW TEACHERS' CONCERNS INFLUENCE INNOVATION ADOPTION[1]

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Educators, researchers, and policymakers are expressing growing concern about the ineffectiveness of educational change efforts. As one writer concludes, "disappointment is intense and widespread." Such disappointment stems, in large part, from the realization that many innovations introduced into schools either have not been actually adopted[2] or have been modified so much that they hardly resemble the original innovation.

Why have educational change efforts been so disappointing? Research addressing this question is being conducted by the Procedures for Adopting Educational Innovations Project (PAEI)[3] at the Research and Development Center for Teacher Education at The University of Texas at Austin. The PAEI Project

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[1]Revised version of paper presented at the annual meeting of the American Educational Research Association, New York, April 5, 1977.

[2]Adoption is defined as the process of moving from nonuse to extensive, high-level use of the innovation. This includes what many refer to as implementation.

[3]The research described herein was conducted under contract with the National Institute of Education. The opinions expressed are those of the author and do not necessarily reflect the position or policy of the National Institute of Education, and no endorsement by the National Institute of Education should be inferred.

focuses upon highly personal experiences of educators in schools and colleges as they "adopt" educational innovations. The premise of this research is that innovation adoption is individualistic; that is, whether or not each person is involved in the adoption decision, that person decides, for herself or himself. Each person also decides the extent and manner of innovative use. Innovation adoption, moreover, is not a specific event or point in time, but a process that occurs over time.

Research conducted through the PAEI Project has resulted in a conceptual model - the Concerns-Based Adoption Model (CBAM) - which describes the major factors influencing the decisions and actions of individuals in the innovation adoption process. The model hypothesizes two critical indicators - Levels of Use (LoU) of the Innovation and Stages of Concern (SoC) About the Innovation (Hall, Wallace, and Dossett, 1973) - of the level of performance an individual user demonstrates and the kinds of concerns which the innovation causes that user at any given time. This paper explores the relationship between those two indicators, using a case study approach to investigate the ways in which the concerns of individuals relate to their use or nonuse of educational innovations. Two specific research studies are described: a study of the adoption of team teaching at the public school level, and a study of the use of instructional modules in two universities.

The hypothesis that innovation users have distinguishable concerns about any given innovation grew out of the research of Frances Fuller (1969). Fuller found that concerns about teaching progressed from initial concerns about self to concerns about task and finally to concerns about impact. The CBAM hypothesizes that teacher concerns about an innovation will follow the same sequence. That is, initially users have more questions about what the use of an innovation will entail and how it will affect them personally. As these self concerns

diminish, users become more concerned about the tasks related to using the innovation. Finally, once task-related concerns are resolved, users become more concerned about impact, the effects of the innovation on pupils. Fuller concludes that an individual does not move from one stage in the concerns sequence to the next, (e.g., self to task) until concerns at the prior stage are resolved.

Stages of Concern

Seven different Stages of Concern About the Innovation have been identified and operationally defined and an SoC Questionnaire (George, 1977) has been developed to assess them. These Stages of Concern are presented in Figure 1. Stages 2 through 6 in this model can be equated with the levels of concern identified by Fuller: Stage 2, Personal, with self concerns; Stage 3, Management, with task concerns; and Stages 4, 5, and 6, Consequence, Collaboration, and Refocusing, with different kinds of impact concerns.

Stage 1, Information, concerns are hypothesized as an additional important class of concerns for nonusers of an innovation. High Stage 1 concerns indicate a desire for more general descriptive information about the innovation. Stage 1 concerns do not have a self-concern emphasis; rather, they reflect more of an objective, non-egocentric interest in information.

The Concerns-Based Adoption Model hypothesized that nonusers of an innovation will have relatively more intense Stage 0, 1, and 2 concerns, with low intensity Stage 4, 5, and 6 concerns. As use of an innovation begins, Stage 0, 1, and 2 concerns will decrease in intensity; Stage 3 concerns will become more intense; while Stages 4, 5, and 6 concerns gradually increase in intensity. With increased experience and sophistication in use, Stage 4, 5, and 6 concerns will become increasingly intense as Stage 0, 1, 2, and 3 concerns continue to

Figure 1

Stages of Concern About the Innovation[4]

0 AWARENESS: Little concern about or involvement with the innovation is indicated.

1 INFORMATIONAL: A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.

2 PERSONAL: Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

3 MANAGEMENT: Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.

4 CONSEQUENCE: Attention focuses on impact of the innovation on students in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

5 COLLABORATION: The focus is on coordination and cooperation with others regarding use of the innovation.

6 REFOCUSING: The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

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[4]Original concept from Hall, G. E., Wallace, R. C., Jr., & Dossett, W. A. A developmental conceptualization of the adoption process within educational institutions. Austin: Research and Development Center for Teacher Education, The University of Texas, 1973.

decrease in intensity.

The primary focus for the past two years of research has been to develop a measure which describes Stages of Concern and to determine if "developmental" changes in concern occur with increased experience with the innovation. The single most important criterion for selecting members of each research sample, then, was the amount of experience an individual had with a given innovation. The hypothesis was made that a stratified sample according to years of experience with the innovation would provide the best sampling variable, since it would include individuals representing all possible stages of concern. Samples were selected to include a group of nonusers of the innovation and groups with one, two, three, and four or more years of experience with the innovation.

In order to make the studies generalizable, a large sample size and some contrasting innovations were desired. The PAEI research has included the study of 16 different innovations. However, this report is concerned only with the adoption of the innovations of team teaching at the public school level and instructional modules at the university level. The teaming sample included 453 teachers from 39 schools in three states; total of 433 professors from 13 universities in eight states comprised the module sample. During the two-year study, these persons completed 1,180 SoC Questionnaires on teaming and 1,032 on modules.

The Measure

The Stages of Concern About the Innovation Questionnaire, developed to measure the seven hypothesized Stages of Concern About the Innovation, consists of 35 items, each of which has a Likert scale on which respondents indicate their present degree of concern about the topic described in the item. The measure has five items reflecting each Stage of Concern. A reliability study

of the SoC Questionnaire, involving a total of 132 professors and classroom teachers, was conducted in September 1974. The raw score test-retest correlations ranged from a low of .65 to a high of .86 on the seven SoC factors, and the internal consistency (alpha coefficients) of the factors ranged from .80 to .93. The alpha coefficient for the total score was .96.

Using a percentile table to score the SoC questionnaire data, an SoC profile can be developed for each individual. Figure 2 presents the profile of a teacher, offering a general picture of his/her concerns and reflecting the relative intensity of each Stage of Concern about a given innovation. This individual has high personal concerns (Stage 2) about the innovation with relatively low concerns about Collaboration (Stage 5), Management (Stage 3), and Consequences (Stage 4). SoC profiles are developed for groups in the same way. A user's manual has been developed describing the measure, scoring procedure, and process for clinical interpretation of SoC profiles (Hall, George, & Rutherford, 1977).

Levels of Use

The second major dimension of the Concerns-Based Adoption Model is Levels of Use (LoU). LoU is an effort to account for individual variations in the use of an innovation. Eight discrete Levels of Use of an Innovation that an individual may demonstrate have been defined; these levels range from lack of knowing that the innovation exists, to its active, sophisticated, and highly effective use, and further, to active searching for a superseding innovation. (Figure 3 names and briefly describes the eight levels.) LoU is based upon the hypothesis that growth in quality of use of an innovation (movement toward higher levels) is developmental.

A focused interview is used to obtain information for assigning a person

Figure 2

Individual SoC Profile

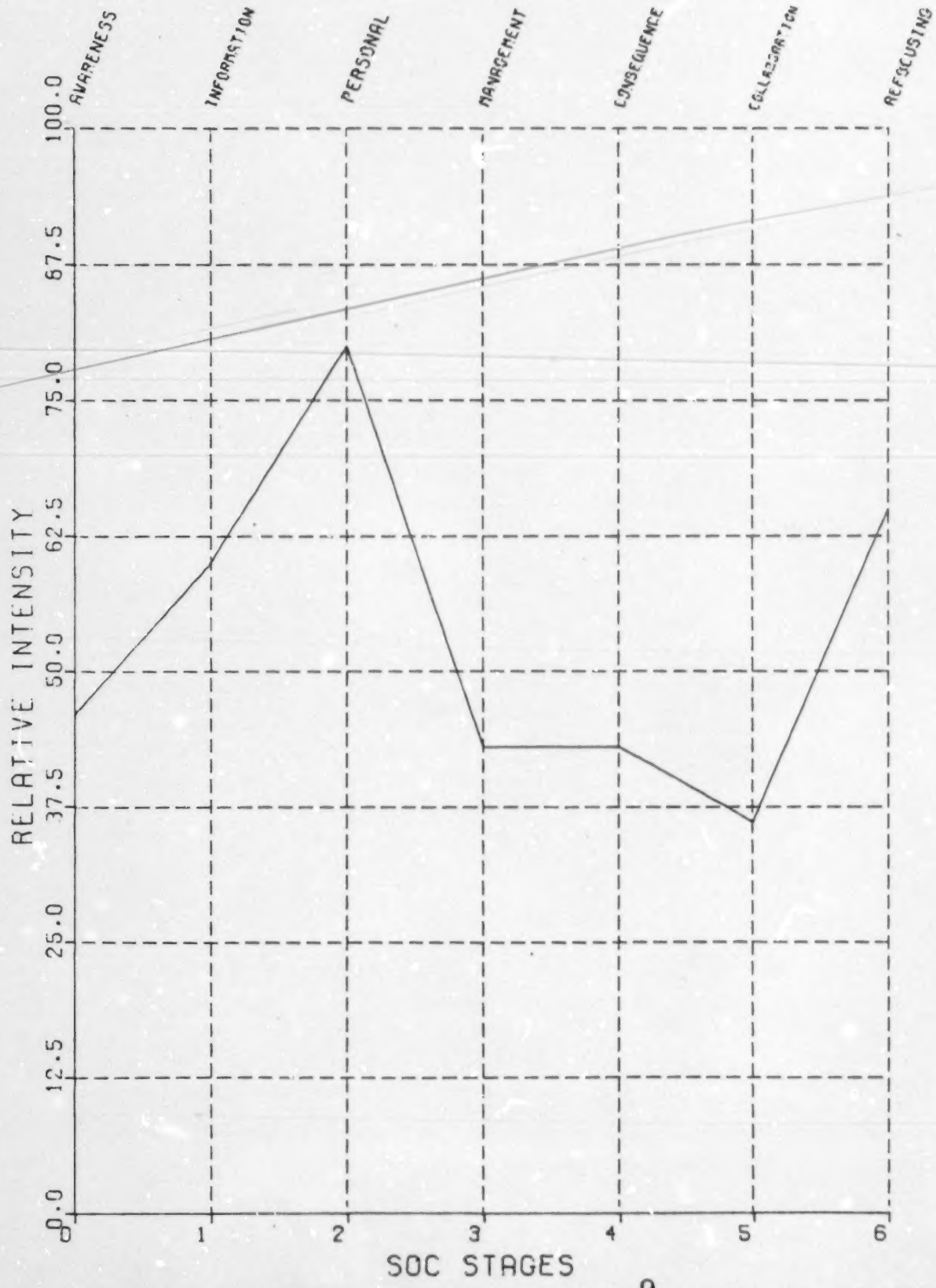

Figure 3

Levels of Use of the Innovation[5]

0 NONUSE: State in which the user has little or no knowledge of the innovation, no involvement with the innovation, and is doing nothing toward becoming involved.

I ORIENTATION: State in which the user has recently acquired or is acquiring information about the innovation and/or has recently explored or is exploring its value orientation and its demands upon user and user system.

II PREPARATION: State in which the user is preparing for first use of the innovation.

III MECHANICAL USE: State in which the user focuses most effort on the short-term, day-to-day use of the innovation with little time for reflection. Changes in use are made more to meet user needs than client needs. The user is primarily engaged in a stepwise attempt to master the tasks required to use the innovation, often resulting in disjointed and superficial use.

IVA ROUTINE: State in which use of the innovation is stabilized. Few if any changes are being made in ongoing use. Little preparation or thought is being given to improving innovation use or its consequences.

IVB REFINEMENT: State in which the user varies the use of the innovation to increase the impact on clients within immediate sphere of influence. Variations are based on knowledge of both short- and long-term consequences for clients.

V INTEGRATION: State in which the user is combining own efforts to use the innovation with related activities of colleagues to achieve a collective impact on clients within their common sphere of influence.

VI RENEWAL: State in which the user reevaluates the quality of use of the innovation, seeks major modifications of or alternatives to present innovation to achieve increased impact on clients, examines new developments in the field, and explores new goals for self and the system.

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[5]Excerpted from: The LoU chart: Operational definitions of Levels of Use of the Innovation. Austin: Research and Development Center for Teacher Education, The University of Texas, 1975.

to a Level of Use. (Complete details on the interview and the development and measurement processes leading to the LoU Chart are described in Loucks, Newlove, and Hall (1976) and Hall, Loucks, Rutherford, and Newlove (1975).) Based on the interview, each individual is assigned a single LoU score when dealing with the LoU ratings of a given group, a distribution profile is used to show the percentage of subjects at each LoU. (Figure 4 provides an example of this profile.)

Findings

Data obtained from the SoC Questionnaries from each of the two research samples were analyzed and compared with LoU designations for the purpose of answering the following questions:

a) What is the relationship between the collective concerns of teachers within a school and the use of an innovation within that institution?

b) How do individual concerns vary and how do these variations relate to use of the innovation?

c) What are the implications of Stages of Concern for innovation adoption?

Collective Concerns

Figure 5 reflects the concerns of professors in a university which had been using instructional modules (i.e., self-paced learning packages) for some time prior to the initiation of data collection for the PAEI study. Use of the modules in this institution was very sophisticated as compared with many other institutions, a fact reflected in the institution's concerns profiles. Scores are highest on Stages 4, 5, or 6 which represent impact concerns - a concern to be expected from experienced users. Personal concerns (Stage 2) and task or management concerns (Stage 3) are somewhat lower.

Figure 4

School 1

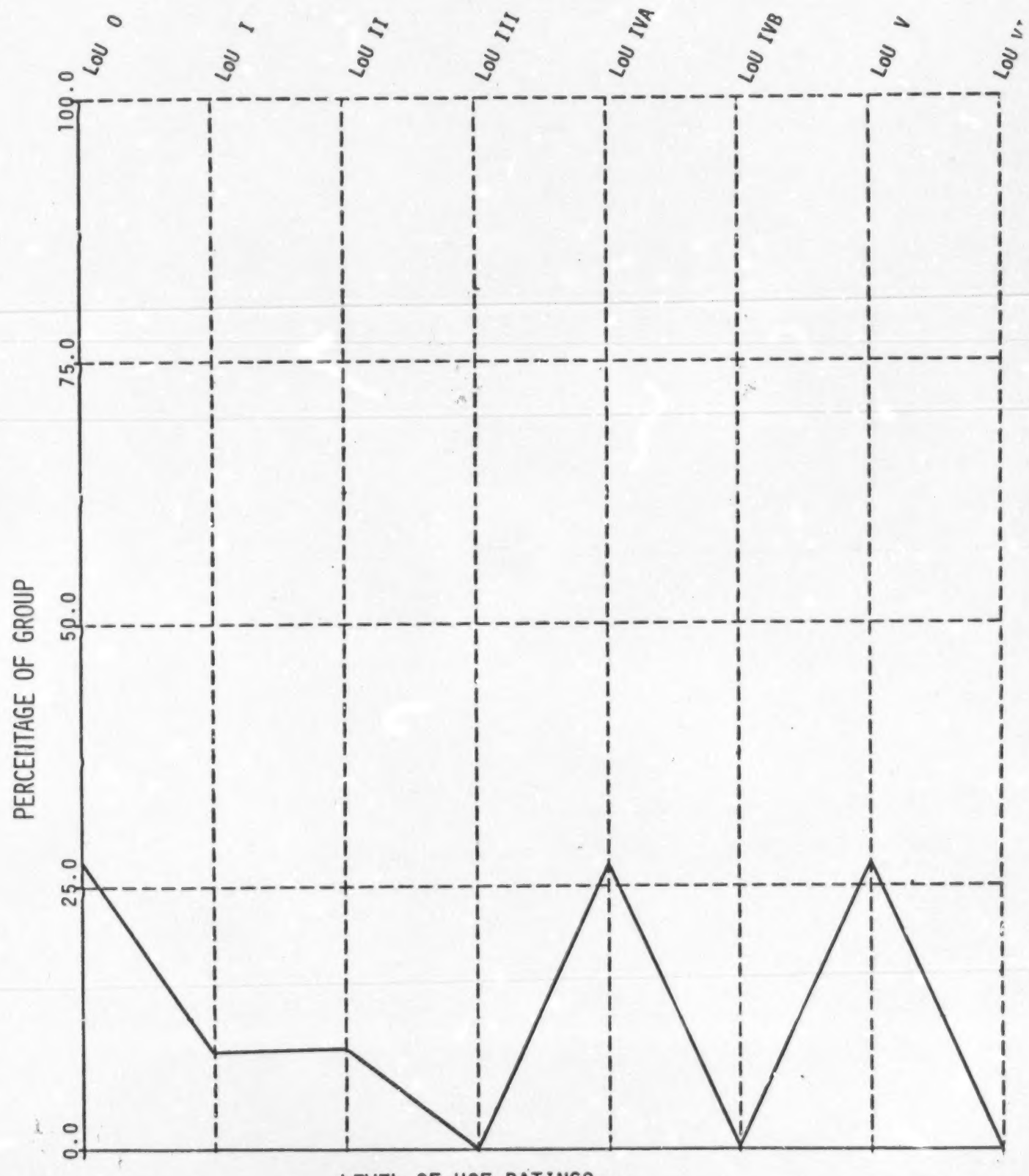
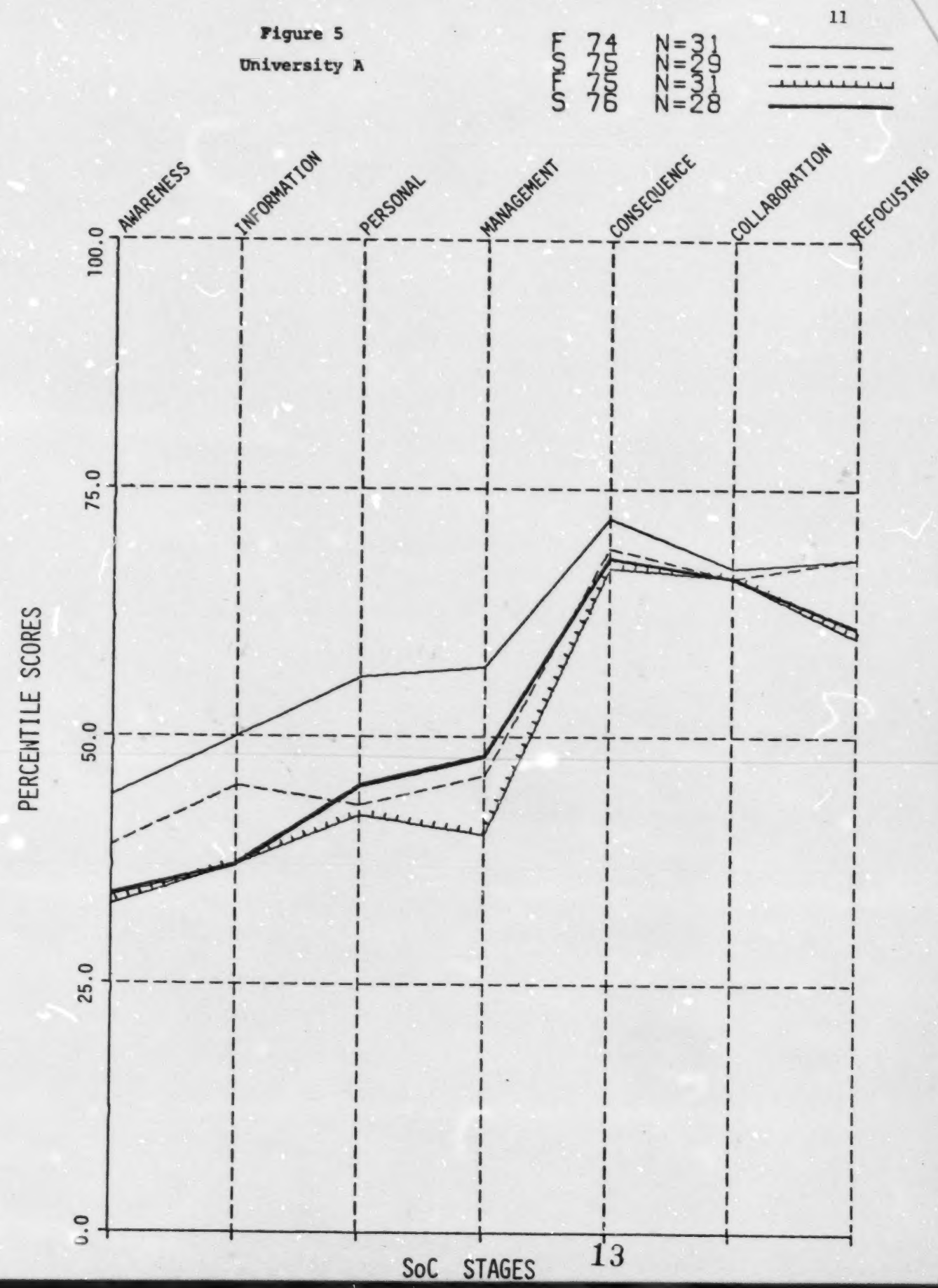


Figure 5

University A



How does the SoC profile relate to the LoU in this institution? Figure 6 presents the LoU distributions; this profile demonstrates that the majority of subjects are actually using modules, and their LoU, for the most part, has advanced beyond the management level (LoU III). This pattern of LoU is consonant with what would be expected based on the SoC profiles.

It should be noted that even in this experienced user institution, some individuals are not using modules at all, lending support to the premise that innovation adoption is individualistic; each individual decides how, when, and if he or she will adopt the innovation.

The concerns profile for the above experienced user institution can be compared with the profile of an institution in the early stages of the process of adopting modules. The SoC profile for the latter university is presented in Figure 7. This profile is typical of nonusers, that is, their levels of concern are higher on Stages 0, 1, and 2 and lower on Stages 3 through 6. The LoU profile substantiates the conclusions of the SoC profile; Figure 8 indicates that the majority of the faculty are nonusers. Again, the individual nature of innovation adoption is reflected in the fact that among the many nonusers there are a few persons who are using modules.

It is interesting to note that during the two years in which SoC and LoU data were collected at University B, administrators spent much time discussing the use of instructional modules, but made little or no ongoing, directed effort to fulfill the informational needs consistently evidenced in the faculty's SoC profiles. The university administration had endorsed and given considerable emphasis to the use of instructional modules. Nevertheless, endorsement and encouragement were not sufficient to promote widespread use. Through their SoC profile, the faculty expressed definite concerns (primarily informational) which were not being met and resolved.

Figure 6

University A

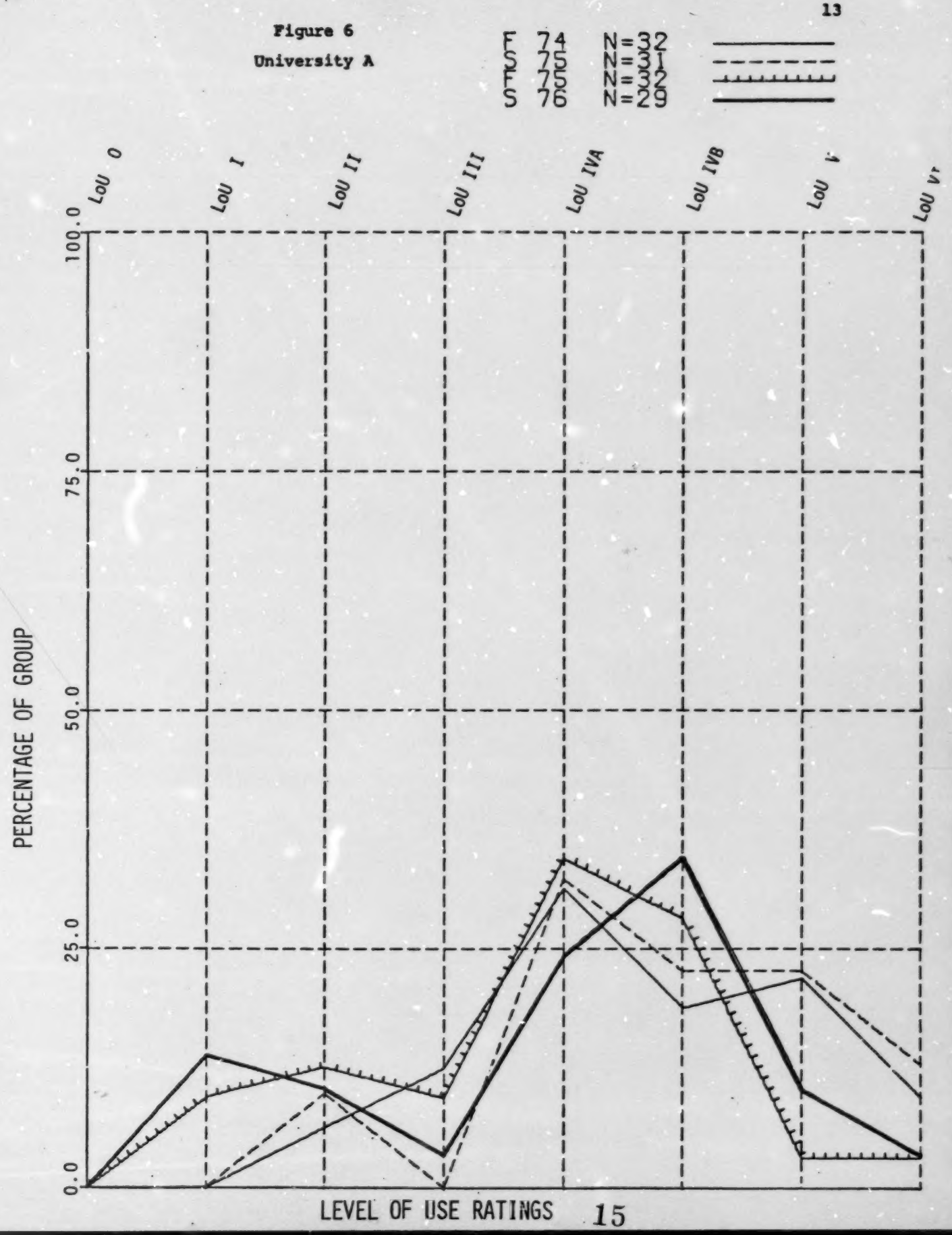


Figure 7

University B

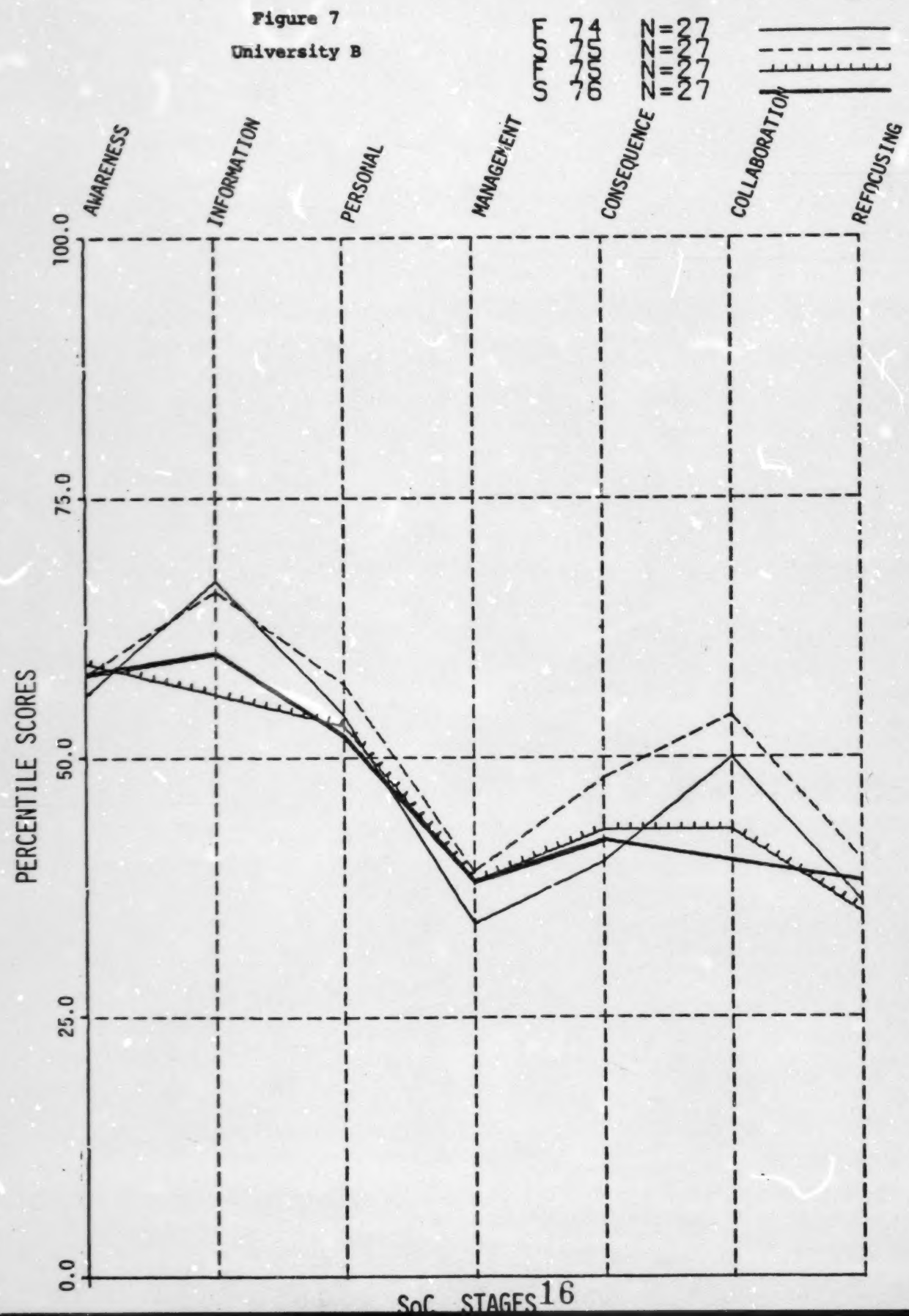
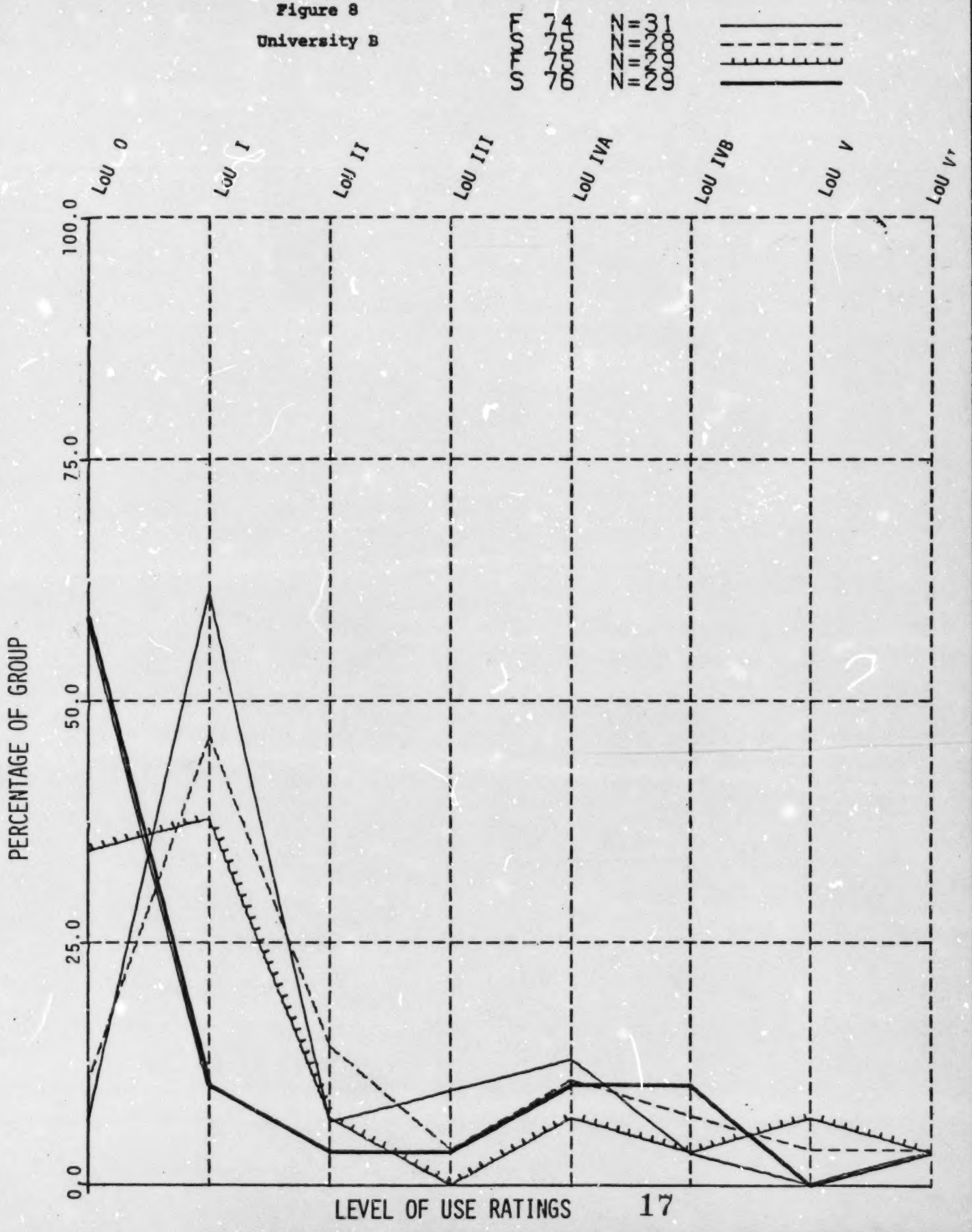


Figure 8

University B



Studies of public schools which were adopting the innovation of team teaching reflect a relationship between SoC and LoU similar to that found in the universities, as Figures 9 and 10 (School 2) and 11 and 12 (School 3) demonstrate. School 2 was chosen as a sample whose members were considering the use of teaming; the LoU profile verifies the fact that virtually no teaming was actually underway. The school's SoC profile is a rather stable nonuser profile (high on Stages 0, 1, and 2) across the two-year period, indicating that there was no substantial interest in or push for use of teaming among teachers.

Teachers in School 3, on the other hand, had been much involved in teaming for several years; use of the innovation had become fairly routine, as the preponderance of IVA's on the LoU profile indicates. The SoC profile for the school is a definite user profile. The high level of concern on Stage 5, Collaboration, reflects the fact that the faculty was interested in finding ways to help members within teams to work together more effectively and in developing collaborative relationships among teams. They even had enlisted the aid of an outside consultant to assist them in this process. If research in this school had continued, and if those collaboration efforts were successful, the LoU profile probably would reflect a movement from IVA to V.

The profiles presented so far have demonstrated clearly the SoC/LoU relationship in user versus nonuser institutions. Figures 13 and 14 show the changes in SoC and LoU profiles in a school that moved from nonuse to use over the two year-period. During the first year, the high SoC scores on Stages 0, 1, and 2 indicated many users; the high informational concerns suggest that use of teaming was under consideration. This supposition was borne out by the LoU profile, which shows most subjects moved from an orientation level (LoU I) in the Fall to a state of preparation for use (LoU II) in the

Figure 9

School 2

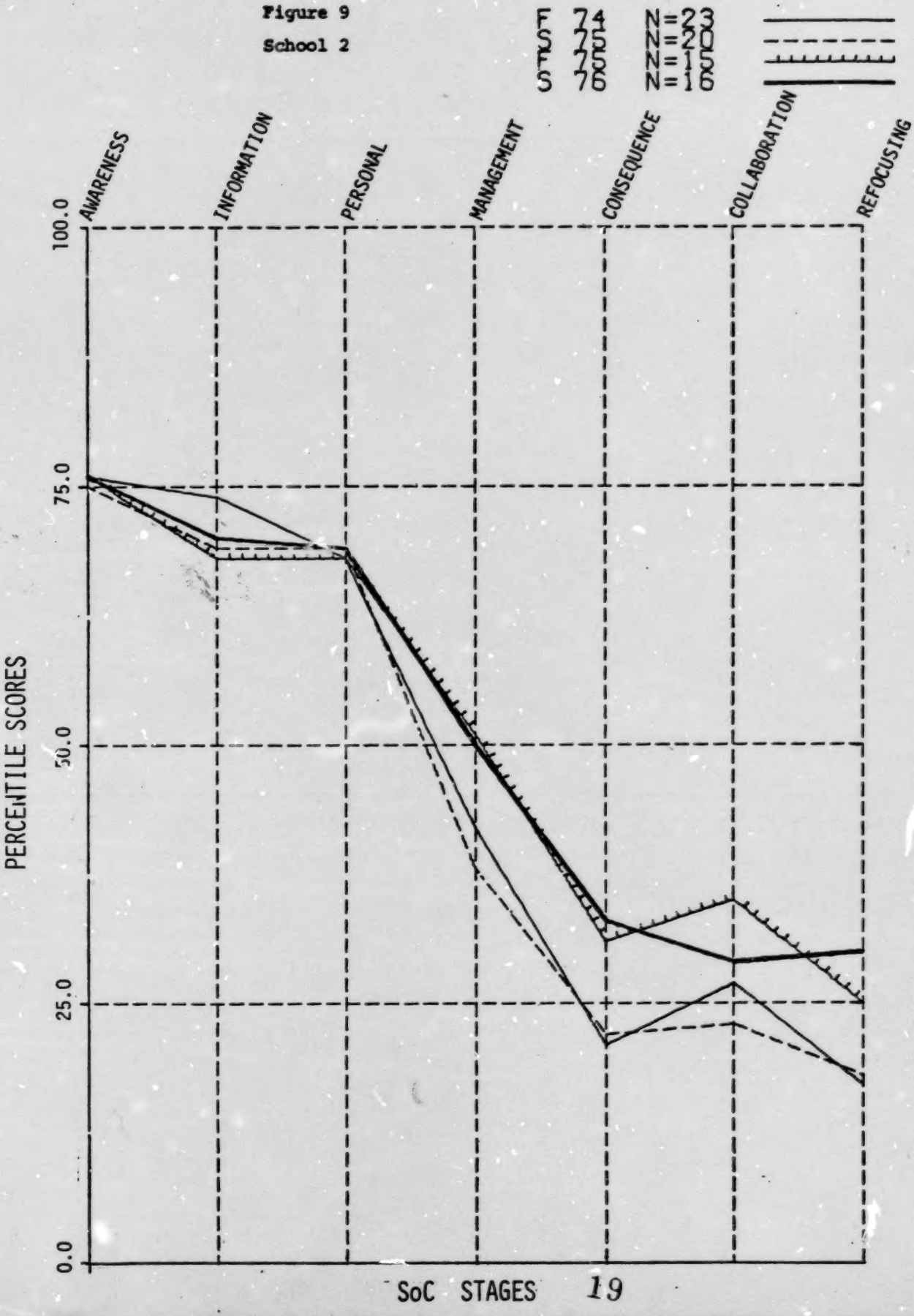


Figure 10

School 2

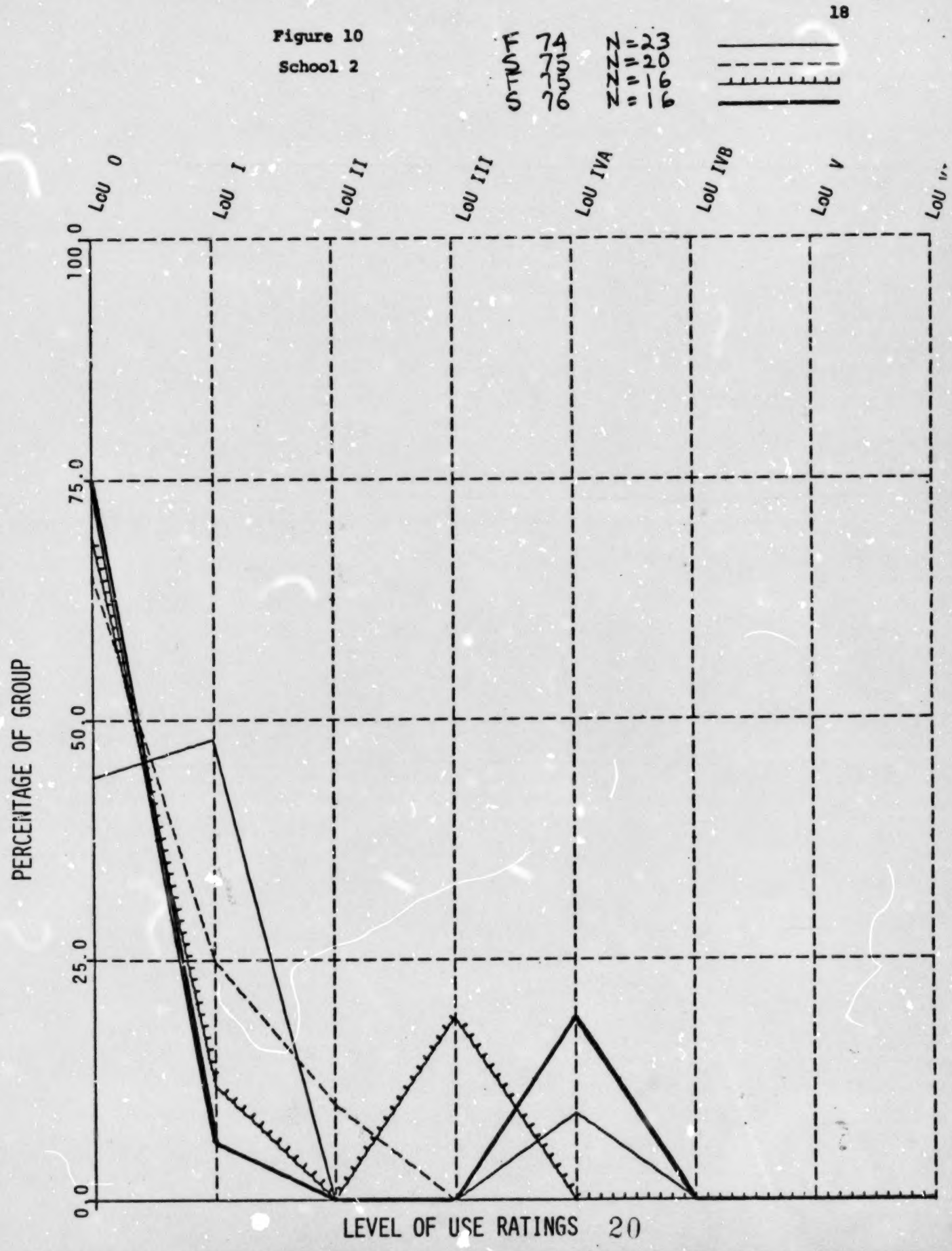


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Figure 11

School 3

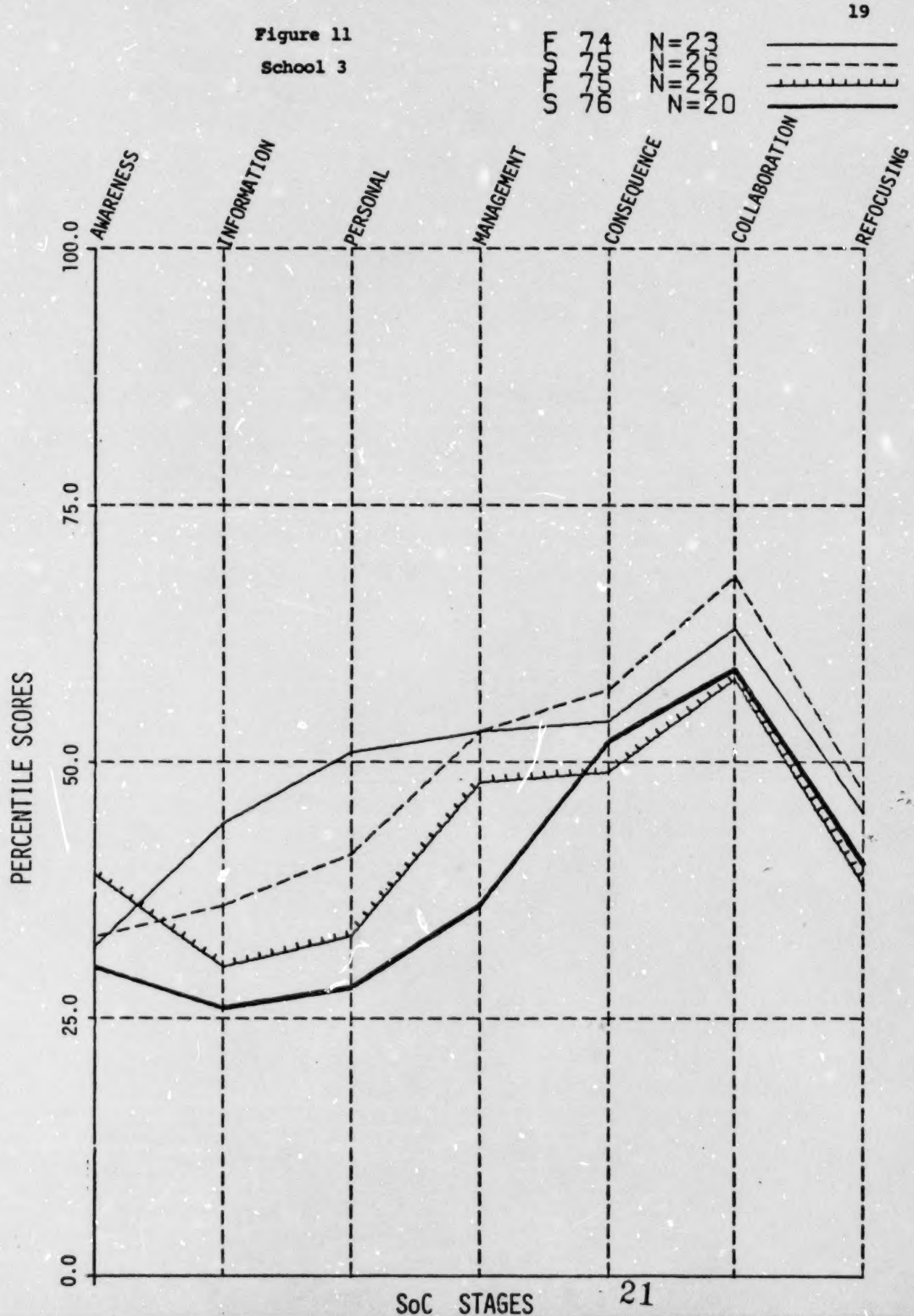


Figure 12

School 3

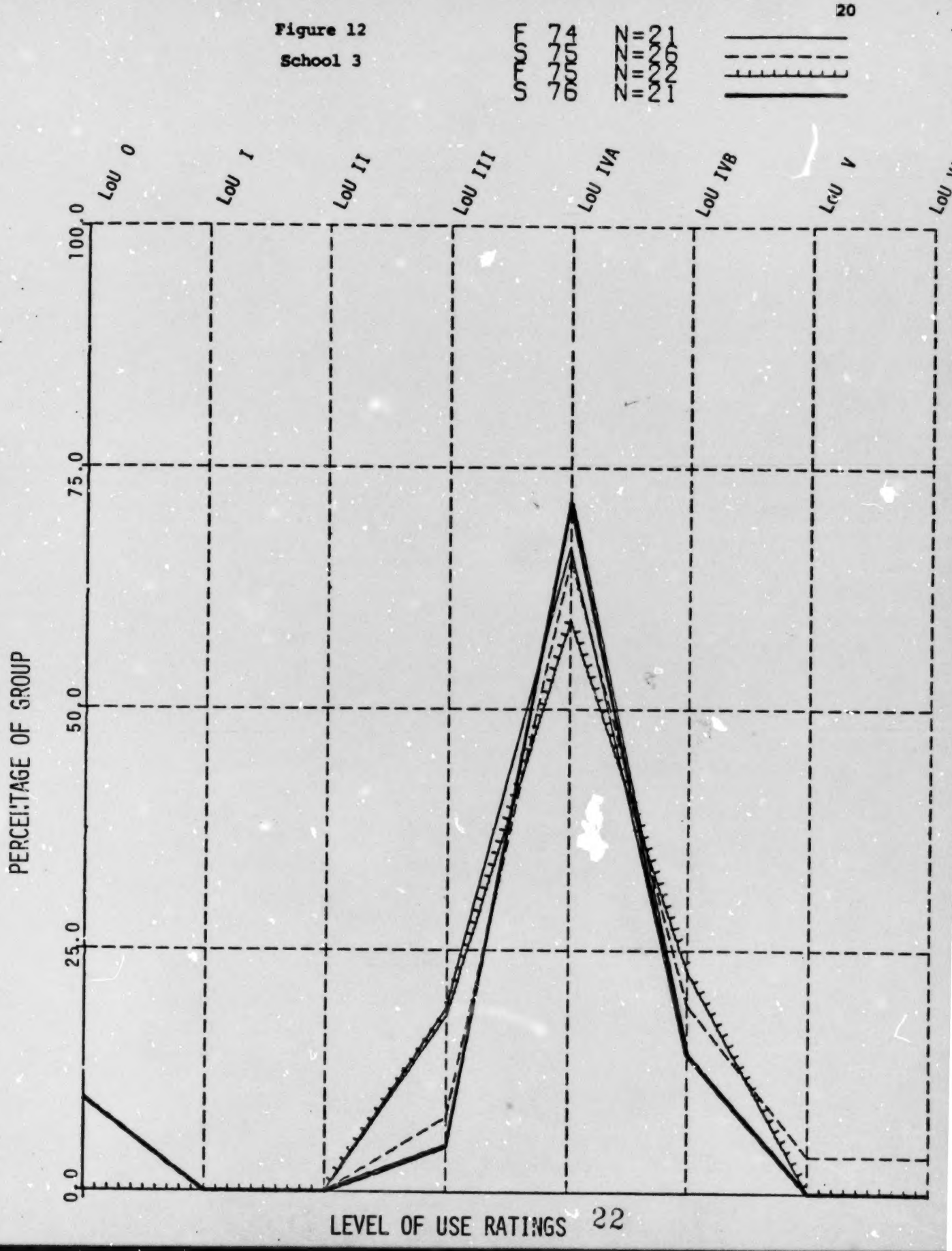


Figure 13

School 4

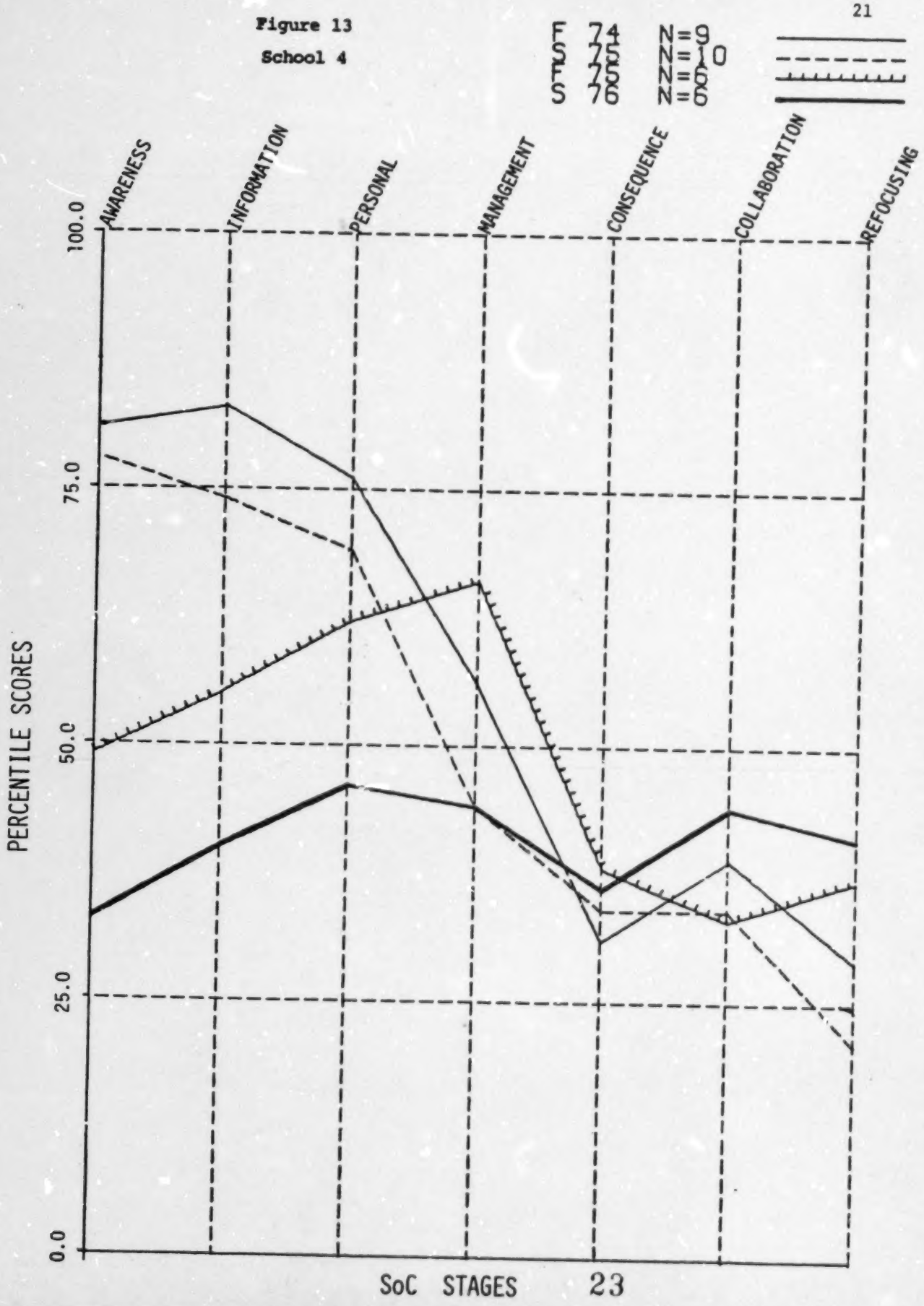
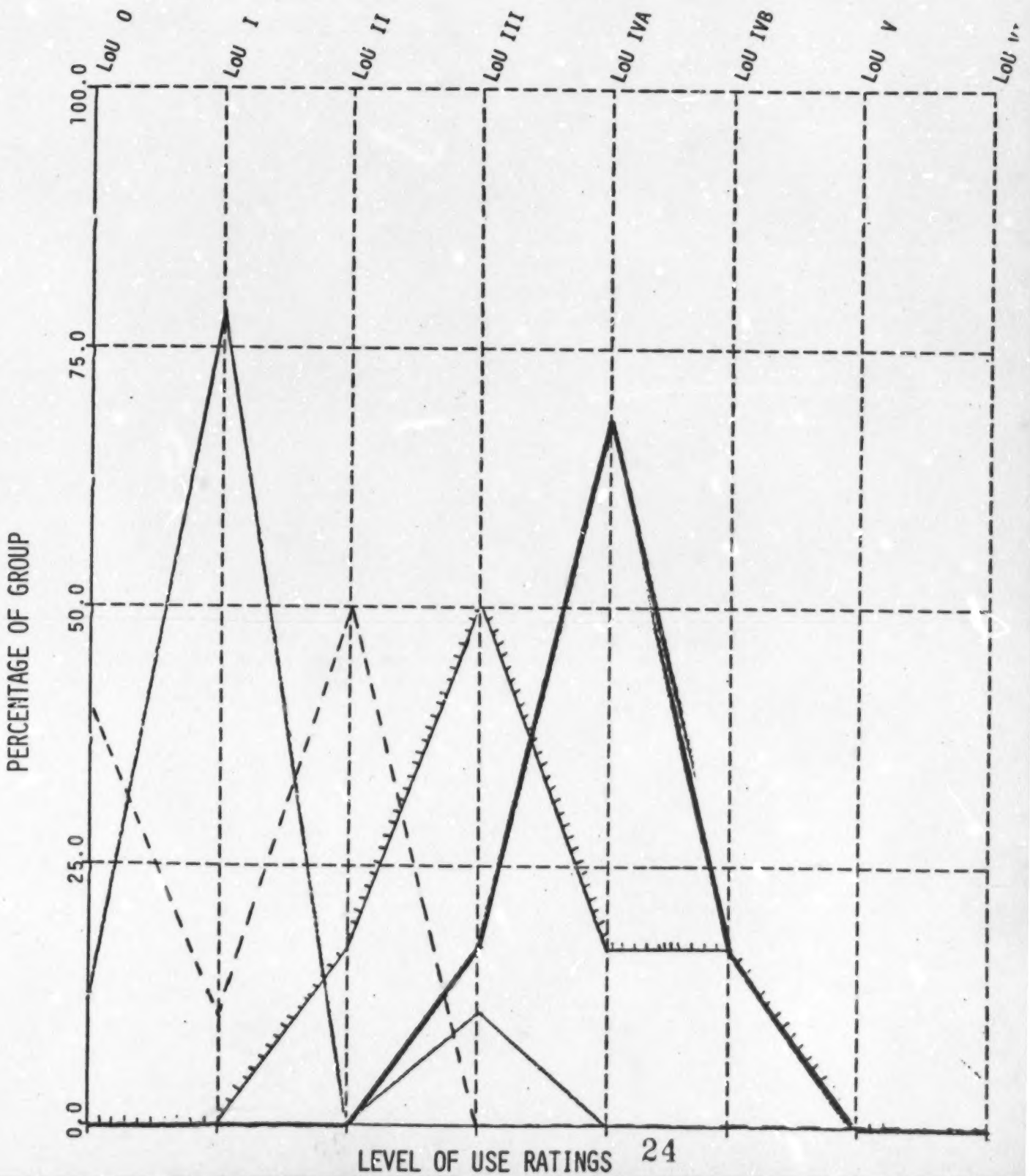


Figure 14

School 4

F 74 N = 9
S 75 N = 10
F 75 N = 6
S 76 N = 6



Spring.

By the Fall of '75, the SoC profile was no longer a nonuser profile; instead, the high level of management concerns (Stage 3) suggests the subjects were in the initial phases of use of teaming. The LoU profile confirms that the subjects had begun use and that most of them were at the mechanical use level (LoU III). By Spring '76, management concerns had subsided somewhat as had the overall intensity of concerns (all stages are below the 50th percentile), indicating that a reasonably comfortable pattern of use of teaming had been established. The LoU profile in Figure 14 shows that, in the Spring '76, 66% of the subjects were using teaming in a routine way (LoU IVA).

Individual Concerns

The group profiles described above clearly demonstrate the relationship between SoC and LoU. Because a basic premise of this research is that innovation adoption is individualistic, it is, however, necessary to look as well at the SoC and LoU of individuals within a group. Figures 15 and 16 present the SoC profiles of two individuals from School 4. Both subjects had high information concerns (SoC 1) in the Fall of 1974, but by Spring, their SoC profiles differed considerably. Subject J's informational concerns remained very high, while Subject K's concern for information was considerably diminished. Had both subjects received inservice assistance at that time that focused solely on details of the innovation, Subject J would have been well served, but not so for Subject K.

By the Fall of '75, both subjects had begun use of teaming; both expressed considerable management concerns. Even so, the two subjects' profiles differ significantly. The profile for Subject K reveals higher consequence or impact concerns (Stage 4) than management concerns, while the profile for Subject

Figure 15

Subject J

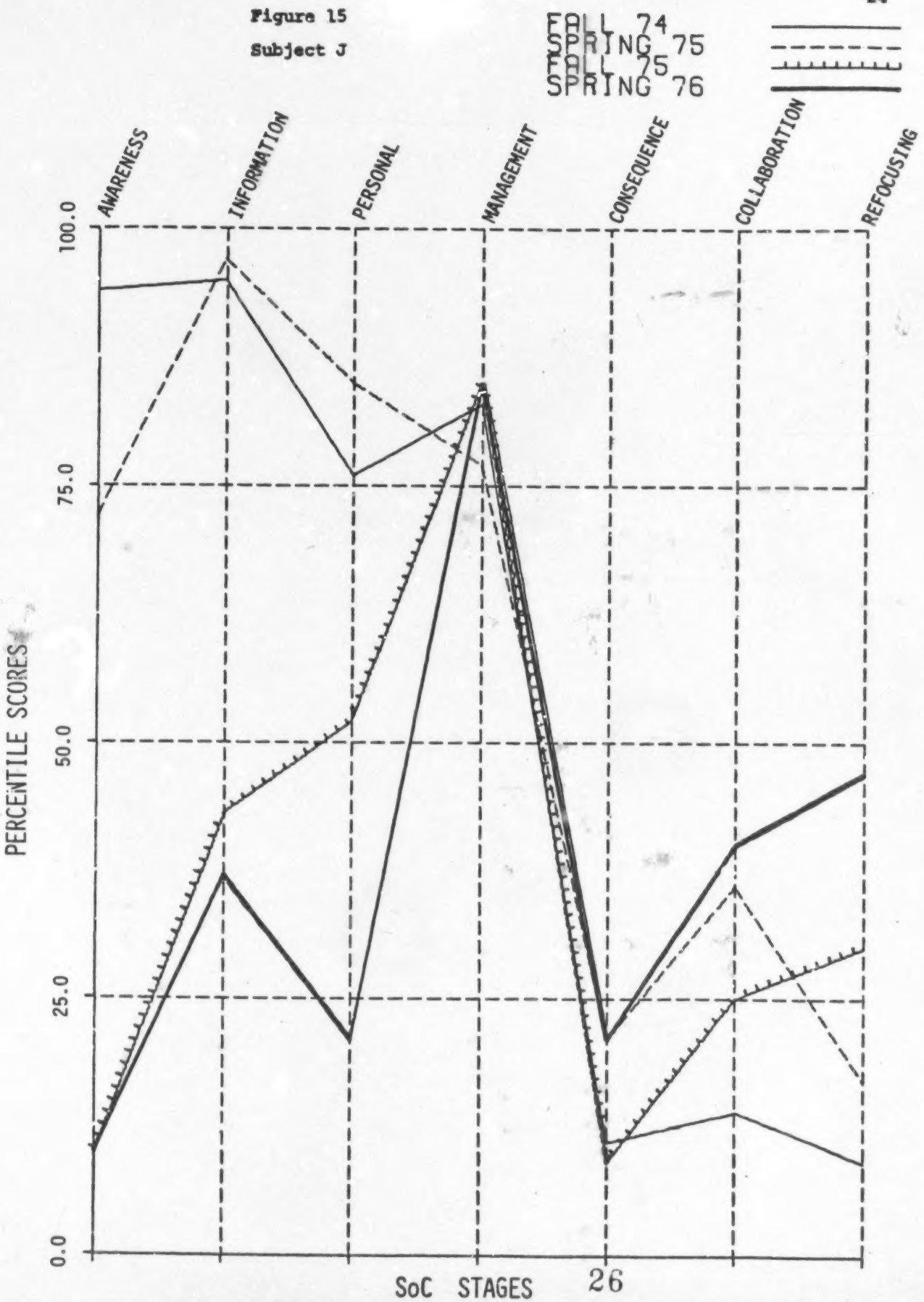
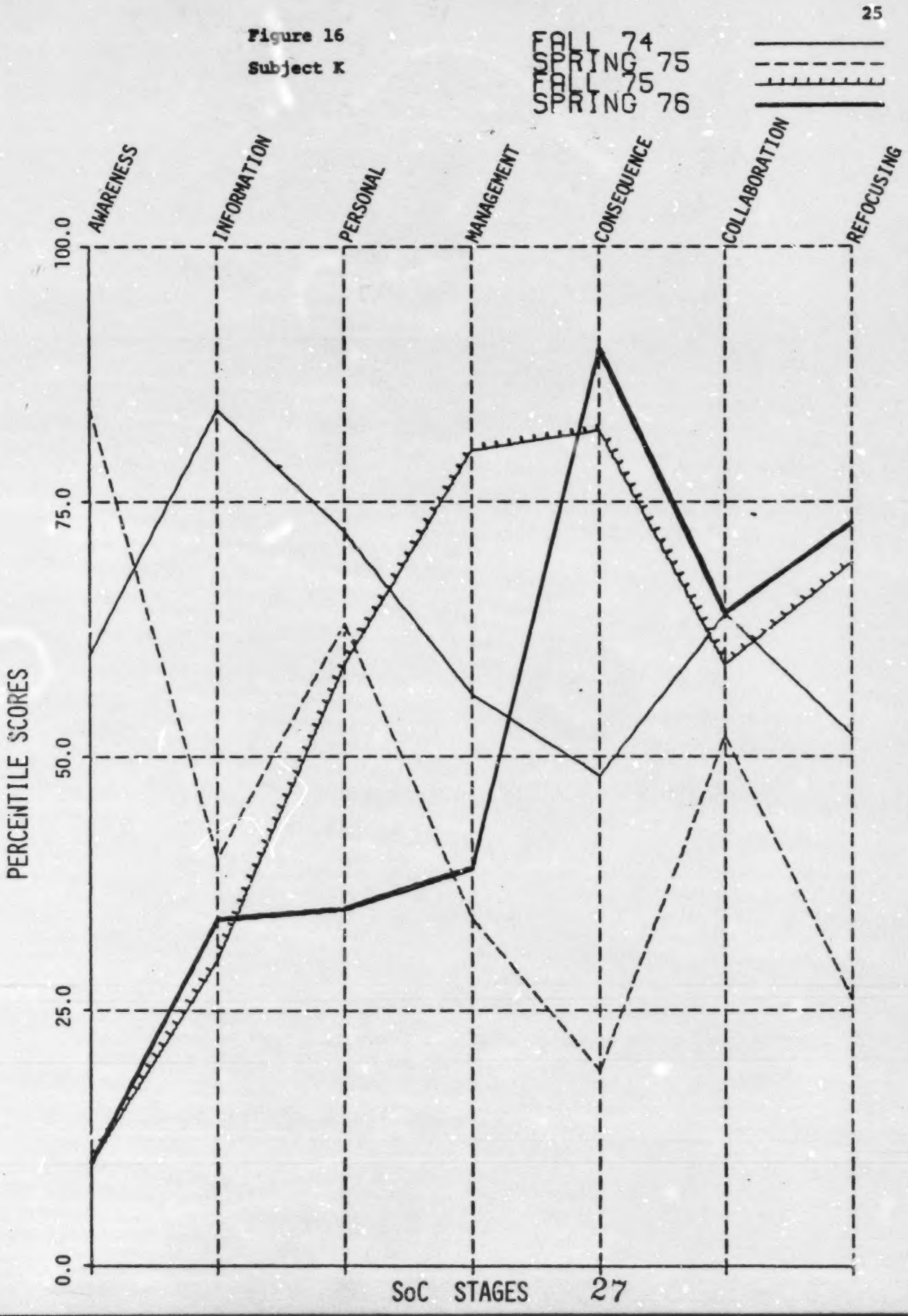


Figure 16

Subject K



J reflects singular concern about management. Both subjects at this time were at LoU III. By Spring '75, Subject K's management concerns apparently had been resolved, while Subject J continued to be highly concerned with management. LoU for Subject K was IVA by Spring '75; Subject J continued at LoU III. Both subjects moved from nonuse to use of teaming over the two-year period, but their concerns varied in significant ways, as did their Level of Use.

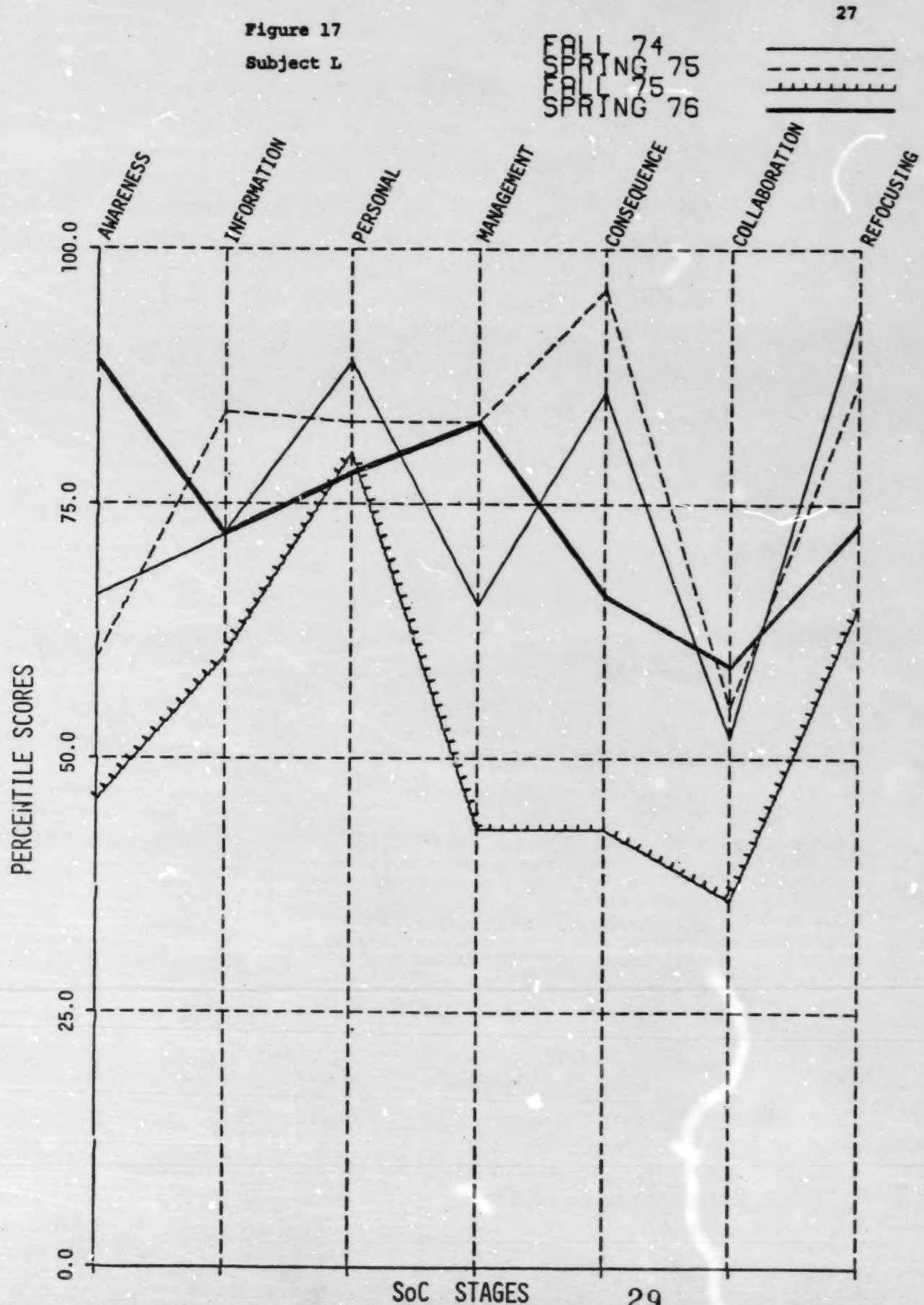
Subject L, in Figure 17, was a faculty member in University A, where modules had been used for some time and concerns were generally high on Stages 4, 5, and 6. During the first year of the study, Subject L's concerns were similar in pattern to the institutional profile except that personal concerns were unusually high. Subject L was using modules at this time. By the second year, L's highest SoC scores were in Stages 0 or 2, a profile characteristic of nonusers. Subject L's LoU profile (not shown) revealed that he/she had ceased using modules. While most of the faculty was concerned with consequences and collaboration, L had many personal concerns, concerns that apparently were not resolved and ultimately led to abandonment of the innovation.

Implications of Concerns for Innovation Adoption

An identifiable relationship exists between the concerns of individuals and their use of an innovation. From scores on the SoC Questionnaire among the samples described in this paper, it was possible to predict with better than 90% accuracy the individuals who were using an innovation and those who were not. Further, an identifiable relationship exists between the collective concerns of teachers or professors and use of the innovation within an institution. The SoC and LoU ratings for an institution present an accurate picture of the institution as a whole, although these are not as reliable for planning interventions as individual ratings. This research showed that the concerns of some individuals within an institution could and did vary markedly

Figure 17

Subject L



from the group. In turn, this variation in concern was reflected in the way individuals used the innovation. The message contained in these findings was clear and forceful: actions taken to enhance innovation adoption must focus on individuals, not groups, and must respond to the concerns of the individuals.

Concerns of teachers and professors, then, do influence the decisions they make and actions they take regarding the adoption of an innovation. Their concerns are influenced by many factors in their personal and professional environments. During the two-year period of this research, both schools and universities were identified in which no identifiable interventions were made in response to teacher concerns. The SoC profiles of these institutions remained virtually stable as did their level of adoption of the innovation. On the other hand, changes in SoC profiles were evident in institutions where interventions had occurred. This finding suggests that interventions (i.e., inservice workshops, direct personal assistance, etc.) designed to recognize and accomodate teacher concerns may influence those concerns in a positive and desired way.

With the Stages of Concern Questionnaire, educators can easily and quickly identify the concerns of individuals or groups about the adoption of a specific innovation. Given this diagnostic information, interventions can be developed addressing the specific concerns of individuals. When interventions are personalized on the basis of diagnostic information, adoption of educational innovations should become more effective, and disappointment in the state of educational change should be greatly reduced.

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